

Lunar Electrostatic Discharge (ESD) and Dust Mitigation Tool (LEDM)

Active Technology Project (2023 - 2025)



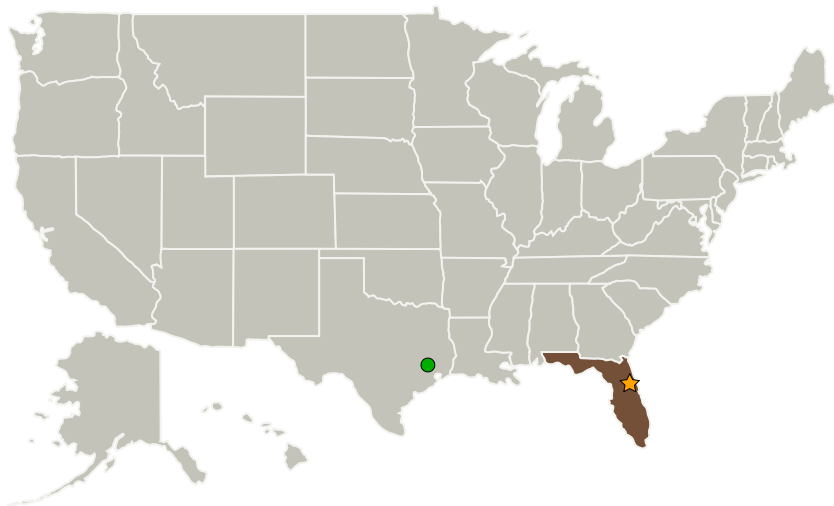
Project Description

This project will develop a non-flight ground prototype of a handheld static ionizer tool for astronauts to remove dust and neutralize electrostatic charge from materials in a lunar environment. This tool will be a miniaturized & portable version of a commercially available static ionizer gun.

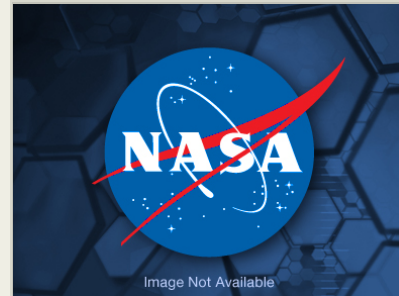
Anticipated Benefits

Dust accumulation during the Apollo mission was well-known to cause several adverse effects throughout the missions. As a result, the “dust problem” has been identified as being one of the top two necessary technology needs to overcome for extended long-term human presence on the moon as defined during the Constellation Program. To date, the only known attempt to remove dust from suits and equipment was the use of brushes which fared quite poorly in the lunar environment.

Primary U.S. Work Locations and Key Partners



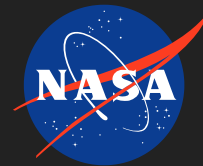
Organizations Performing Work	Role	Type	Location
★ Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
● Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas



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**Primary U.S. Work Locations**

Florida

Organizational Responsibility**Responsible Mission Directorate:**Exploration Systems
Development Mission
Directorate (ESDMD)**Lead Center / Facility:**

Kennedy Space Center (KSC)

Responsible Program:

EVA and Human Surface Mobility

Project Management**Project Manager:**

Monica J Hooks

Principal Investigator:

Charles R Buhler

Co-Investigator:

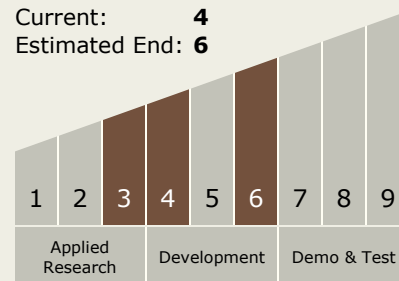
James R Phillips

Technology Maturity (TRL)

Start: 3

Current: 4

Estimated End: 6





Technology Areas

Primary:

- TX07 Exploration Destination Systems
 - └ TX07.2 Mission Infrastructure, Sustainability, and Supportability
 - └ TX07.2.5 Particulate Contamination Prevention and Mitigation

Other/Cross-cutting:

- TX13 Ground, Test, and Surface Systems
 - └ TX13.2 Test and Qualification
 - └ TX13.2.8 Environment Testing
 - └ TX13.4 Mission Success Technologies
 - └ TX13.4.5 Operations, Health and Maintenance for Ground and Surface Systems

Target Destination

Moon and Cislunar

Views on TechPort

47 views